

Application No. 10/020,922

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September 22, 2003

Supplemental Reply to Office Action of March 28, 2003

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented) A sealant for polypropylene consisting essentially of a composition comprising:

a high-pressure-processed low-density polyethylene (A) having a density (measured in accordance with ASTM D 1505) of 910 to 930 kg/m³ and a melt flow rate (measured under a load of 2.16 kg at 190°C in accordance with ASTM D 1238) of 0.5 to 20 g/10 min, and

C) an ethylene/ α -olefin copolymer (B) having a density (measured in accordance with ASTM D 1505) of 860 to less than 890 kg/m³, a melt flow rate (measured under a load of 2.16 kg at 190°C in accordance with ASTM D 1238), MFR_{2.16}, of 0.5 to 40 g/10 min and a molecular weight distribution (Mw/Mn) determined by gel permeation chromatography (GPC) of 1.5 to 3, obtained from ethylene and an α -olefin having 3 to 10 carbon atoms,

a linear low-density polyethylene (C) having a density (measured in accordance with ASTM D 1505) of 890 to 940 kg/m³ and a melt flow rate (measured under a load of 2.16 kg at 190°C in accordance with

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ASTM D 1238) of 0.2 to 30 g/10 min, obtained from ethylene and an α -olefin having 3 to 10 carbon atoms, or

both of said ethylene/ α -olefin copolymer (B) and said linear low-density polyethylene (C);

wherein, in the composition, the high-pressure-processed low-density polyethylene (A) is contained in an amount of 10 to 85% by weight, the ethylene/ α -olefin copolymer (B) is contained in an amount of less than 50% by weight, and the ethylene/ α -olefin copolymer (B), the linear low-density polyethylene (C), or said ethylene/ α -olefin copolymer (B) and said linear low-density polyethylene (C) are contained in a total amount of 15 to 90% by weight, based on the total weight of high-pressure-processed low-density polyethylene (A), ethylene/ α -olefin copolymer (B) and linear low-density polyethylene (C),

which composition exhibits a melt flow rate (measured under a load of 2.16 kg at 190°C in accordance with ASTM D 1238) of 1 to 15 g/10 min and a melt tension (MT) measured at 190°C of 5 to 100 mN.

2. (previously presented) The sealant for polypropylene as claimed in claim 1, wherein said sealant comprises said ethylene/ α -olefin copolymer (B), and the ethylene/ α -olefin copolymer (B) has a ratio, $MFR_{10}/MFR_{2.16}$, of melt flow rate (measured under a load of 10

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kg at 190°C in accordance with ASTM D 1238), MFR₁₀, to melt flow rate (measured under a load of 2.16 kg at 190°C in accordance with ASTM D 1238), MFR_{2.16}, of 5 to 20.

C.1
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3. (previously presented) The sealant for polypropylene as claimed in claim 1 or 2, wherein the molecular weight distribution (Mw/Mn) determined by GPC of the linear low-density polyethylene (C), is in the range of 1.5 to 5.

4. (currently amended) A hermetically sealed package comprising a laminate having a structure such that one side of a sealant layer (I) consisting essentially of the a sealant for polypropylene as claimed in claim 1 is overlaid with a resin layer of polypropylene (II) by heat sealing ~~lamination~~, lamination;

wherein the sealant for polypropylene consists essentially of a composition comprising:

a high-pressure-processed low-density polyethylene (A) having a density (measured in accordance with ASTM D 1505) of 910 to 930 kg/m³ and a melt flow rate (measured under a load of 2.16 kg at 190°C in accordance with ASTM D 1238) of 0.5 to 20 g/10 min, and

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an ethylene/ α -olefin copolymer (B) having a density (measured in accordance with ASTM D 1505) of 860 to less than 890 kg/m³, a melt flow rate (measured under a load of 2.16 kg at 190°C in accordance with ASTM D 1238), MFR_{2.16}, of 0.5 to 40 g/10 min and a molecular weight distribution (Mw/Mn) determined by gel permeation chromatography (GPC) of 1.5 to 3, obtained from ethylene and an α -olefin having 3 to 10 carbon atoms,

a linear low-density polyethylene (C) having a density (measured in accordance with ASTM D 1505) of 890 to 940 kg/m³ and a melt flow rate (measured under a load of 2.16 kg at 190°C in accordance with ASTM D 1238) of 0.2 to 30 g/10 min, obtained from ethylene and an α -olefin having 3 to 10 carbon atoms, or

both of said ethylene/ α -olefin copolymer (B) and said linear low-density polyethylene (C);

wherein, in the composition, the high-pressure-processed low-density polyethylene (A) is contained in an amount of 10 to 85% by weight, the ethylene/ α -olefin copolymer (B) is contained in an amount of 50% by weight or less, and the ethylene/ α -olefin copolymer (B), the linear low-density polyethylene (C), or said ethylene/ α -olefin copolymer (B) and said linear low-density polyethylene (C) are contained in a total amount of 15 to 90% by weight, based on the total

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weight of high-pressure-processed low-density polyethylene (A),
ethylene/ α -olefin copolymer (B) and linear low-density polyethylene
(C),

wherein said composition exhibits a melt flow rate (measured
under a load of 2.16 kg at 190°C in accordance with ASTM D 1238) of 1
to 15 g/10 min and a melt tension (MT) measured at 190°C of 5 to 100
mN.

5. (previously presented) The hermetically sealed package as claimed in claim 4, wherein the laminate has a structure such that another side, opposite to the side overlaid with the resin layer of polypropylene (II), of the sealant layer (I) is overlaid with a base layer (III) of a member selected from the group consisting of a polyester, a polyamide, a metallized film, an aluminum foil and a polyolefin by laminating, and wherein the sealant layer (I) has a thickness of 5 to 10 μm .

6. (currently amended) The hermetically sealed package as claimed in claim 5, wherein the base layer (III) is laminated with the sealant layer (I) consisting essentially of the sealant for polypropylene ~~as claimed in claim 1~~ by extrusion laminating.

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7. (**currently amended**) The hermetically sealed package as claimed in claim 4, wherein the sealant layer (I) consisting essentially of the sealant for polypropylene ~~as claimed in claim 1~~ is formed by inflation molding or cast molding.

8. (**currently amended**) A hermetically sealed package comprising a cover of a laminate and a cup of a resin layer of polypropylene (II),

wherein said laminate has a structure such that one side of a sealant layer (I) consisting essentially of ~~the~~ a sealant for polypropylene ~~as claimed in claim 1~~, is overlaid with a resin layer of polypropylene ~~(II), which is in the form of the cup (II)~~ by laminating; and

such that another side, opposite to the side overlaid with the resin layer of polypropylene (II), of the sealant layer (I) is overlaid by laminating with a base layer (III), said base layer (III) is selected from the group consisting of a polyester, a polyamide, a metallized film, an aluminum foil and a polyolefin;

said base layer (III) and said sealant layer (I) each having a thickness of 5 to 100 μm ; ~~and form a cover of a laminate.~~

wherein the sealant for polypropylene consists essentially of a composition comprising:

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a high-pressure-processed low-density polyethylene (A) having a density (measured in accordance with ASTM D 1505) of 910 to 930 kg/m³ and a melt flow rate (measured under a load of 2.16 kg at 190°C in accordance with ASTM D 1238) of 0.5 to 20 g/10 min, and

an ethylene/α-olefin copolymer (B) having a density (measured in accordance with ASTM D 1505) of 860 to less than 890 kg/m³, a melt flow rate (measured under a load of 2.16 kg at 190°C in accordance with ASTM D 1238), MFR_{2.16}, of 0.5 to 40 g/10 min and a molecular weight distribution (Mw/Mn) determined by gel permeation chromatography (GPC) of 1.5 to 3, obtained from ethylene and an α-olefin having 3 to 10 carbon atoms,

a linear low-density polyethylene (C) having a density (measured in accordance with ASTM D 1505) of 890 to 940 kg/m³ and a melt flow rate (measured under a load of 2.16 kg at 190°C in accordance with ASTM D 1238) of 0.2 to 30 g/10 min, obtained from ethylene and an α-olefin having 3 to 10 carbon atoms, or

both of said ethylene/α-olefin copolymer (B) and said linear low-density polyethylene (C);

wherein, in the composition, the high-pressure-processed low-density polyethylene (A) is contained in an amount of 10 to 85% by weight, the ethylene/α-olefin copolymer (B) is contained in an amount

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of 50% by weight or less, and the ethylene/ α -olefin copolymer (B), the linear low-density polyethylene (C), or said ethylene/ α -olefin copolymer (B) and said linear low-density polyethylene (C) are contained in a total amount of 15 to 90% by weight, based on the total weight of high-pressure-processed low-density polyethylene (A), ethylene/ α -olefin copolymer (B) and linear low-density polyethylene (C),

wherein said composition exhibits a melt flow rate (measured under a load of 2.16 kg at 190°C in accordance with ASTM D 1238) of 1 to 15 g/10 min and a melt tension (MT) measured at 190°C of 5 to 100 mN.

9. **(previously presented)** The sealant for polypropylene as claimed in claim 1, wherein said composition comprises both the ethylene/ α -olefin copolymer (B) and the linear low-density polyethylene (C).

10. **(currently amended)** The hermetically sealed package as claimed in claim 5, wherein the resin layer of polypropylene (II) is in the form of the cup, and the sealant layer (I) and the base layer (III) form a cover of a laminate.

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11. (currently amended) The hermetically sealed package as claimed in claim 10, wherein said sealant layer ~~(I)~~ and (I) and said base layer (III) each have a thickness of 5 to 100 ~~um~~ um.

C 12. (currently amended) An A hermetically sealed package comprising a cover of laminate and a cup of a resin layer of polypropylene (II),

said cover of laminate having a structure such that one side of a sealant layer (I) consisting essentially of ~~the~~ a sealant for polypropylene ~~as claimed in claim 1 or 2~~ is overlaid with a base layer (III) of a member selected from among a polyester, a polyamide, a metallized film, an aluminum foil and a polyolefin, said base layer (III) and said sealant layer (I) each having a thickness of 5 to 100 μm ,

said cup of a resin layer of polypropylene (II) is overlaid with said cover of laminate faced on the side of sealant layer (I) by heat sealing ~~laminating~~ lamination;

wherein the sealant for polypropylene consists essentially of a composition comprising:

a high-pressure-processed low-density polyethylene (A) having a density (measured in accordance with ASTM D 1505) of 910 to 930 kg/m^3

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and a melt flow rate (measured under a load of 2.16 kg at 190°C in accordance with ASTM D 1238) of 0.5 to 20 g/10 min, and

an ethylene/α-olefin copolymer (B) having a density (measured in accordance with ASTM D 1505) of 860 to less than 890 kg/m³, a melt flow rate (measured under a load of 2.16 kg at 190°C in accordance with ASTM D 1238), MFR_{2.16}, of 0.5 to 40 g/10 min and a molecular weight distribution (Mw/Mn) determined by gel permeation chromatography (GPC) of 1.5 to 3, obtained from ethylene and an α-olefin having 3 to 10 carbon atoms,

a linear low-density polyethylene (C) having a density (measured in accordance with ASTM D 1505) of 890 to 940 kg/m³ and a melt flow rate (measured under a load of 2.16 kg at 190°C in accordance with ASTM D 1238) of 0.2 to 30 g/10 min, obtained from ethylene and an α-olefin having 3 to 10 carbon atoms, or

both of said ethylene/α-olefin copolymer (B) and said linear low-density polyethylene (C);

wherein, in the composition, the high-pressure-processed low-density polyethylene (A) is contained in an amount of 10 to 85% by weight, the ethylene/α-olefin copolymer (B) is contained in an amount of 50% by weight or less, and the ethylene/α-olefin copolymer (B), the linear low-density polyethylene (C), or said ethylene/α-olefin

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copolymer (B) and said linear low-density polyethylene (C) are contained in a total amount of 15 to 90% by weight, based on the total weight of high-pressure-processed low-density polyethylene (A), ethylene/α-olefin copolymer (B) and linear low-density polyethylene (C),

wherein said composition exhibits a melt flow rate (measured under a load of 2.16 kg at 190°C in accordance with ASTM D 1238) of 1 to 15 g/10 min and a melt tension (MT) measured at 190°C of 5 to 100 mN.

13. (**currently amended**) A hermetically sealed package comprising a laminate having a structure such that one side of a sealant layer (I) consisting essentially of the sealant for polypropylene as claimed in claim 1 is overlaid with a resin layer of polypropylene (II) by heat sealing lamination.

14. (**currently amended**) The hermetically sealed package as claimed in claim 4, wherein the laminate has a structure such that another side, opposite to the side overlaid with the resin layer of polypropylene (II), of the sealant layer (I) is overlaid with a base layer (III) of a member selected from the group consisting of a polyester, a polyamide, a metallized film, an aluminum foil and a

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polyolefin by laminating, and wherein the sealant layer (I) has a thickness of 5 to 10 μm .

15. (currently amended) The hermetically sealed package as claimed in claim 5, wherein the base layer (III) is laminated with the sealant layer (I) consisting essentially of the sealant for polypropylene as claimed in claim 1 by extrusion laminating.

16. (currently amended) The hermetically sealed package as claimed in claim 4, wherein the sealant layer (I) consisting essentially of the sealant for polypropylene as claimed in claim 1 is formed by inflation molding or cast molding.

17. (currently amended) A hermetically sealed package comprising a cover of a laminate and a cup of a resin layer of polypropylene (II),

wherein said laminate has a structure such that one side of a sealant layer (I) consisting essentially of ~~the~~ a sealant for polypropylene ~~as claimed in claim 1~~, is overlaid with a resin layer of polypropylene (II) by laminating; and

such that another side, opposite to the side overlaid with the resin layer of polypropylene (II), of the sealant layer (I) is

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overlaid by laminating with a base layer (III), said base layer (III) is selected from a polyester, a polyamide, a metallized film, an the group consisting of aluminum foil and a polyolefin;

said base layer (III) and said sealant layer (I) each having a thickness of 5 to 100 μm .

wherein the sealant for polypropylene consists essentially of a composition comprising:

a high-pressure-processed low-density polyethylene (A) having a density (measured in accordance with ASTM D 1505) of 910 to 930 kg/m³ and a melt flow rate (measured under a load of 2.16 kg at 190°C in accordance with ASTM D 1238) of 0.5 to 20 g/10 min, and

an ethylene/ α -olefin copolymer (B) having a density (measured in accordance with ASTM D 1505) of 860 to less than 890 kg/m³, a melt flow rate (measured under a load of 2.16 kg at 190°C in accordance with ASTM D 1238), MFR_{2.16}, of 0.5 to 40 g/10 min and a molecular weight distribution (Mw/Mn) determined by gel permeation chromatography (GPC) of 1.5 to 3, obtained from ethylene and an α -olefin having 3 to 10 carbon atoms,

a linear low-density polyethylene (C) having a density (measured in accordance with ASTM D 1505) of 890 to 940 kg/m³ and a melt flow rate (measured under a load of 2.16 kg at 190°C in accordance with

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ASTM D 1238) of 0.2 to 30 g/10 min, obtained from ethylene and an α -olefin having 3 to 10 carbon atoms, or

both of said ethylene/ α -olefin copolymer (B) and said linear low-density polyethylene (C);

wherein, in the composition, the high-pressure-processed low-density polyethylene (A) is contained in an amount of 10 to 85% by weight, the ethylene/ α -olefin copolymer (B) is contained in an amount of 50% by weight or less, and the ethylene/ α -olefin copolymer (B), the linear low-density polyethylene (C), or said ethylene/ α -olefin copolymer (B) and said linear low-density polyethylene (C) are contained in a total amount of 15 to 90% by weight, based on the total weight of high-pressure-processed low-density polyethylene (A), ethylene/ α -olefin copolymer (B) and linear low-density polyethylene (C),

wherein said composition exhibits a melt flow rate (measured under a load of 2.16 kg at 190°C in accordance with ASTM D 1238) of 1 to 15 g/10 min and a melt tension (MT) measured at 190°C of 5 to 100 mN.

18. (currently amended) The hermetically sealed package as claimed in claim 5, wherein the resin layer of polypropylene

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(II) is in the form of the cup, the sealant layer (I) and the base layer (III) form a cover of a laminate.

19. (currently amended) The hermetically sealed package as claimed in claim 10, said sealant layer (I) and said base layer (III) each having a thickness of 5 to ~~100um~~ 100 μ m.

20. (currently amended) A hermetically sealed package comprising a cover of laminate and a cup of a resin layer of polypropylene (II), said cover of laminate having a structure such that one side of a sealant layer (I) consisting essentially of ~~the~~ a sealant for polypropylene as claimed in claim 1 is overlaid with a base layer (III) of a member selected from among a polyester, a polyamide, a metallized film, an aluminum foil and a polyolefin, said base layer (III) and said sealant layer (I) each having a thickness of 5 to 100 μ m,

said cup of a resin layer of polypropylene (II) is overlaid with said cover of laminate faced on the side of sealant layer (I) by heat sealing laminating.